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EXAMINER
SHEIKH, AYAZ R

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/294,956	Applicant(s) COX ET AL.010101	
	Examiner GAIL O HAYES	Art Unit 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-16,18-22,24,27-41,47-49,51-62,64,66-68,70, 73-80 , 108-117,120,122-124,127 and 129-134* is/are rejected.

7)☒ Claim(s) *81-87* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Continuation of Disposition of Claims: Claims pending in the application are 1-3,5-16,18-22,24,27-41,47-49,51-64,66-68,70,73-87,108-120,122-127 and 129-134.

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 1-3, 5-16, 18-22, 24, 27-41, 47-49, 51-62,64, 66-68, 70, and 73-80, 127-131 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

2. Claim 1 is directed to a method for inserting a digital signature into digital data. The method comprises steps of assigning, inserting, sing, and receiving. A review of the specification reveals that while the disclosed environment is described as a digital camera, the claimed invention is not so limited, see page 8. The description of figure 5, see page 19, makes clear that at least some of the elements which provide the improvement to the digital camera are implemented via programming. Further, the various elements that would perform the recited steps are merely represented as black boxes labeled "Associated Data Insertion Means" 305 or "Signing Means" 303 for example. No physical structure is disclosed. The claim fails to recite use of physical structure for performing the recited functions and the examiner respectfully asserts that the claimed invention is directed to software alone. Software without more does not fall within the statutory class and without use of any processing equipment is more akin to data. Thus, the examiner respectfully asserts that the claimed invention is directed to non-statutory subject matter.

3. Dependent claims 2-3, 5-16, 18-22, 24, and 27-41 further limit the type of data or digital data being processed via the software of claim 1 but fail to include any tangible subject matter. These claims therefore are also directed to non-statutory subject matter.

4. Claim 47 is directed to an encoder including means for assigning, for signing, for inserting, and for receiving. As discussed above for claim 1, the specification reveals that that software alone provides the structure for the recited means. Thus, while couched in apparatus format, the claimed invention is directed to software alone without inclusion of any tangible subject matter.

5. Dependent claims 48-49, 51-62, 64, 66-68, 70, and 73-80 further limit the type of data recited or add more software elements.

6. Dependent claims 81-82 include means for transmitting which are disclosed in the specification as GSP system or networks, see pages 15-17 and thus recite statutory subject matter.

7. Dependent claim 83 includes a semiconductor chip while claims 84-87 include a memory and thus recite statutory subject matter.

8. Claims 124, 127-129 like claim 47 are directed to an encoder. However as with claim 47 no recitation of physical structure explicitly or implicitly through disclosures of the specification is found.

9. Dependent claims 125-126 further limit the type of data being encoded but fail to include any additional elements to the software of claim 124.

10. Claims 130-131 are directed to methods of inserting data but fail as discussed with respect to claim 1 no structure for performing this function other than software is disclosed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Claim 24 depends on canceled claim 23. As the scope of the claim cannot be determined, it is impossible to apply art to the claim.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 131 and 133 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steinberg (5,862,218)..

14. As per claim 131 and 133, Steinberg discloses that camera 10 receives a password and indicium from a host computer 12. Systems 10 and 12 may communicate via a modem. The downloaded indicium is used to mark original image

data, see col. 3 line 45 to col 4 line 30 and col 7 lines 1-31. The marked data is created by inserting the watermark into the original image data, see figures 6-7 and their accompanying discussion, and is used for authentication, see col 8 lines 26-53.

15. The inventions of claims 131 and 133 differ from Steinberg in that data inserted into the image is received from an internet link and in claim 133 via a computer capable of accessing the internet. The examiner respectfully asserts that disclosure of a modem and telephone lines as communication means between camera 10 and host computer 12 suggests use of a network. Motivation to make use of the Internet as the network involved would have been the cost and convenience saved by using the pre-established communication medium instead of creating a private network.

Claims 131 and 133 are rejected.

16. Claims 130, 132 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman, PN 5,499,294 and further in view of Hashimoto et al.

17. Friedman is directed to a digital camera that includes means to authenticate images taken with the camera. The means to authenticate include use of a digital signature.

18. As per claim 130, Friedman discloses a method for inserting data (such as date, time, light level, camera position, etc.) into digital data (i.e., the entire digital image including the border) for subsequent authentication, see col. 4 line 55 – col. 5 line 14. Friedman also suggests use of GPS data (data received via radio frequency) for indicating the geographic coordinates of the camera to be included in border data, see

col 9 lines 7-28. The digital signature is of course used for authentication, see col 4 lines 47-54.

19. The invention of claim 130 differs from the claimed invention in that the reference suggests use of a GPS system when the technology is available. Hashimoto et al. discloses use of technology to incorporate GPS data into a camera system.

20. As per claim 132, the examiner respectfully asserts that means for inserting and means for authenticating is suggested in the passages cited above. Further, use of a GPS system involves communication by satellite that involves use of an antenna.

21. Claims 117, 120, and 124 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman (5,499,294) in view of Hashimoto as discussed above and further in view of Coppersmith et al. (6,256,736).

22. As per claim 120, Friedman as discussed above is directed to use of a digital signature to authenticate a digital image. In this system, the digital signature is sent attached to the image, see col. 1 line 65 – col 2 line 1. Included in the digital signature is associated data (i.e., geographic coordinates of the camera), see col 9 lines 8-28. and col 10 lines 24-26.

23. Friedman differs from the claimed invention, in that there is no discussion of assigning predetermined bits of the image data for receiving a digital signature and inserting the digital signature into the predetermined bits for authentication. Further, as no bits of the image data are reserved for the digital signature, no step of signing the digital data excluding the assigned bits is disclosed. In fact, Friedman provides the digital signature as a separate file, see col 5 lines 65-68.

24. Coppersmith is directed to watermarking of data such as sound, image or video, see col 1 lines 5-10, in a secure manner and with privacy control, see Summary of Invention. In his background discussion, Coppersmith recognizes limitations with the Friedman approach of providing the digital signature as a separate file, see col. 1 lines 43-68. His solution is to incorporate the authentication information into the data to be protected. The authentication data is incorporated into the least significant bits of the image and thus becomes a watermark, see Figure 4 and its accompanying discussion.

25. If Friedman were modified as taught by Coppersmith, the authentication information would not be included in the border framing the image but would instead be embedded in the least significant bits of the image. The examiner asserts that by assigning the least significant bits to receive the digital signature would result in steps of assigning bits and inserting the signature as claimed. Further, as only the higher order bits are used to form the watermark, see figure 4 and its accompanying discussion, then only the bits of the image data not assigned to receive the digital signature would be signed.

Claim 120 is rejected.

26. Claim 117 differs from claim 120 in that the associated data includes at least two fields. As discussed Friedman, authentication data includes time, place, shutter speed, etc., see figure 4 and its accompanying discussion. The examiner asserts as different types of data is included in the authentication data, it would have been obvious to include them in different fields in order to maintain the separate identity of each.

Claim 117 is rejected.

27. Claim 124 is rejected on the same basis as claim 117.

28. Claims 122-123 and 129 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman in view of Coppersmith, Steinberg, and Daly.

As per claim 129, means for assigning bits to receive a signature, means for inserting associated data, means for signing digital data including the associated data, and means for inserting the signature into the assigned bits have already been addressed above with respect to the Friedman-Coppersmith combination. Steinberg discloses transmission of a PW and indicia to create a watermark for digital data including images, see col 4 lines 3-17. The PW and indicia are transmitted from host computer 12 to camera 10. Although not explicitly stated, the examiner asserts that this data must be stored in order for the camera to compare the pw with authentication information stored (i.e., recognition means) and to make use of the indicia for subsequent processing to create a watermark. The most logical place to store it would have been memory 50. Further, as disclosed in figure 9 and its accompanying discussion, the indicia can include text and graphic information.

29. It is well known for watermarks to identify the owner of the content and the examiner takes official notice of such. Thus, it would have been obvious to include owner ID information as part of the text and graphic indicia downloaded from the host system. Means to output the indicia exists as part of the Steinberg system or there would be no way for the data to be used by the formula to create the mark.

30. Claim 129 differs from the Friedman-Coppersmith-Steinberg combination in that a PW is provided for user authentication instead of fingerprint recognition. However, as noted in the Daly article, use of biometrics including fingerprints as authentication means is well known. Motivation to make use of biometrics is the passwords can be guessed and are frequently lost or misplaced, see pages 1-2.

Claim 129 is rejected.

31. Claim 122 is rejected on the same basis as claim 129.

32. As per claim 123, use of fingerprints as the biometric is disclosed by Daly as discussed above.

33. Claim 127 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman in view of Coppersmith, Steinberg, and Daly as applied to claim 129 above and further in view of Hashimoto.

34. Hashimoto discloses use of GPS means in a camera system. Thus, the technology existed to implement these means in a camera as suggested in Friedman.

35. Claims 108, 111-112, 114-116, and 134 are rejected under 35 U.S.C. 103(a) as being obvious over Steinberg in view of Daly.

As per claim 134, Steinberg discloses transmission of indicium to create a watermark and of a PW to authenticate a user. Although not explicitly stated, the examiner asserts that this data must be stored in order for the camera to compare the pw with authentication information stored (i.e., recognition means) and to make use of the indicia for subsequent processing to create a watermark. The most logical place to store it would have been memory 50. Further, as disclosed in figure 9 and its

accompanying discussion, the indicia can include text and graphic information, see col 3 line 60 – col 4 line 17.

36. It is well known for watermarks to identify the owner of the content and the examiner takes official notice of such. Thus, it would have been obvious to include owner ID information as part of the text and graphic indicia downloaded from the host system. Means to output the indicia exists as part of the Steinberg system or there would be no way for the data to be used by the formula to create the mark. Motivation to do so would have been as an increased anti-counterfeiting technique.

37. Claim 134 differs from Steinberg in that a PW is provided for user authentication instead of fingerprint recognition. However, as noted in the Daly article, use of biometrics, including fingerprints, as authentication means is well known. Motivation to make use of biometrics instead of passwords is that the latter can be guessed and are frequently lost or misplaced.

Claim 134 is rejected.

38. Claims 108 and 112 are rejected on the same basis as claim 134.

As per claim 109, the watermark would be used to authenticate the digital data as this is the very purpose for which watermarks were developed.

As per claim 111, motivation to include ID information has been discussed above.

As per claim 114, as discussed above Daly discloses use of fingerprints as the biometrics used for authentication.

As per claims 115-116, Steinberg clearly discloses use of a camera as the image generation device and of the image as the digital data.

39. Claim 110 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steinberg and Daly as applied to claim 108 above and further in view of Hashimoto.

40. As per claim 110, the examiner directs attention to use of a GPS system in Hashimoto that establishes location of information for a digital image, see Summary of Invention. The examiner respectfully one of ordinary skill in the art would have been motivated to include this information in the digital imaging system of the Steinberg-Daly combination in order to include information on where the image was acquired. This information is often useful in legal proceedings. Claim 110 is rejected.

41. Claim 113 rejected under 35 U.S.C. 103(a) as being unpatentable over Steinberg in view of Daly as applied to claim 108 above, and further in view of Coppersmith (6,256,736).

42. As discussed above, Coppersmith discloses signing of authentication data and inclusion in the protected content, see Background and Summary of Invention. Motivation to sign the authentication data instead of just encrypting it is that a digital signature authenticates the source of the data. As is well known in the art, a digital signature is created via use of the signer's private key. The examiner respectfully asserts that if authentication data of the Steinberg-Daly combination were to be signed before being inserted to become a watermark, one skilled in the art would have been motivated to include transmission of the private key as well as user biometric data and this data would have been stored by the camera for subsequent use.

43. In the alternative one skilled in the art would have been motivated to store the private key in the camera instead of transmitting it from the host, so that it could used for signing.

Claim 113 is rejected.

44. Claims 118-119 and 125-126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman (5,499,294) in view of Hashimoto and Coppersmith as applied to claim 117 and 124 respectively and further in view of Saito (6,182,218).

45. Saito discloses inclusion of a public key needed to decrypt the encrypted content. Motivation to do so is "the public-key is distributed to the public by various means. When a user can receive the public-key directly from the owner, the user is less likely to receive a false (incorrect) key", see col 12 lines 25-28. In addition, data for identification of the key's owner is also included, see figs 7 and 10 and their accompanying description.

In the Friedman/Hashimoto/Coppersmith combination, the public key would have been included in the digital signature. Claims 118-119 and 125-126 are rejected.

46. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GAIL O HAYES whose telephone number is 703-305-9711. The examiner can normally be reached on Monday - Thursday from 7:30 am to 6:00pm.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

GAIL HAYES
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